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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Re: Julian Crawford

Serial No.: 10/634,166

Filed: 08/05/2003

For: EXPANDABLE TUBULAR FABRIC

Examiner: Bruenjes, Christopher P.

Group Art Unit: 1772

Docket No.: 035470.00001

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Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

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1. Notice of Appeal from the Examiner to the Board of Patent Appeals and Interferences (in duplicate); and
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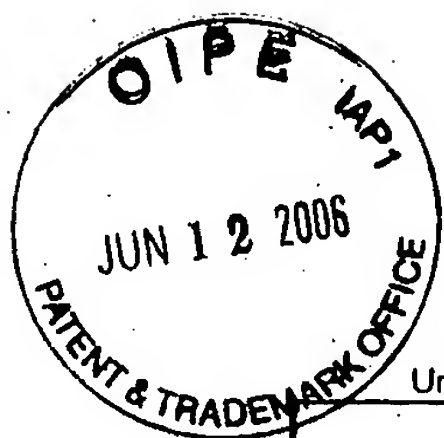
Please charge payment of the appeal fee of \$250.00 to Deposit Account No. 502079. A duplicate copy of this letter is enclosed.

Respectfully submitted,

Henry S. Jaudon  
McNAIR LAW FIRM, P.A.  
Registration No. 34,056  
P.O. Box 10827  
Greenville, SC 29603-0827  
Telephone: (864) 232-4261  
Agent for the Applicant

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By:



PTO/SB/31 (04-05)

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Docket Number (Optional)

035470.00001

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on May 15, 2006

Signature

Typed or printed  
name

Jean S. Manson

In re Application of

Julian Crawford

Application Number

10/634,166

Filed

08/05/2003

For

EXPANDABLE TUBULAR FABRIC

Art Unit

1772

Examiner

Bruenjes, Christopher P.

Applicant hereby appeals to the Board of Patent Appeals and Interferences from the last decision of the examiner.

The fee for this Notice of Appeal is (37 CFR 41.20(b)(1))

\$ 500.00☒ Applicant claims small entity status. See 37 CFR 1.27. Therefore, the fee shown above is reduced by half, and the resulting fee is:\$ 250.00☐ A check in the amount of the fee is enclosed.☐ Payment by credit card. Form PTO-2038 is attached.☐ The Director has already been authorized to charge fees in this application to a Deposit Account. I have enclosed a duplicate copy of this sheet.☒ The Director is hereby authorized to charge any fees which may be required, or credit any overpayment to Deposit Account No. 502079. I have enclosed a duplicate copy of this sheet.☐ A petition for an extension of time under 37 CFR 1.136(a) (PTO/SB/22) is enclosed.**WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.**

I am the

☐ applicant/inventor.☐ assignee of record of the entire interest.  
See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed.  
(Form PTO/SB/96)☒ attorney or agent of record.Registration number 34,056☐ attorney or agent acting under 37 CFR 1.34.

Registration number if acting under 37 CFR 1.34. \_\_\_\_\_

Signature

Henry S. Jaudon

Typed or printed name

(864) 232-4261

Telephone number

5-15-2006

Date

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below\*.

☒ \*Total of 1 forms are submitted.

This collection of information is required by 37 CFR 41.31. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11, 1.14 and 41.6. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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Re: Julian Crawford

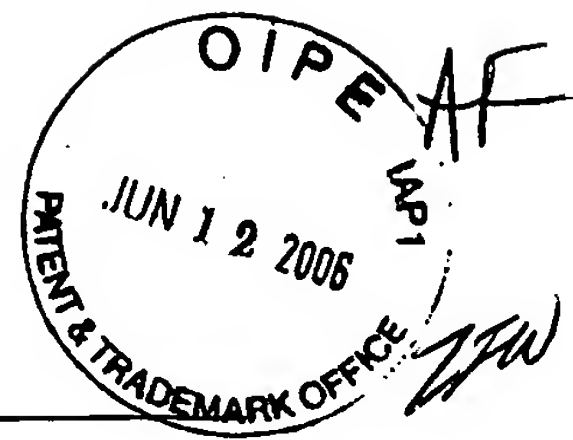
SN: 10/634,166

For: EXPANDABLE TUBULAR FABRIC

Docket No.: 035470.00001

HSJ:jsm

Date mailed: 5-15-2006



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Re: Julian Crawford

Serial No.: 10/634,166

Filed: 11/17/2005

For: EXPANDABLE TUBULAR FABRIC

Examiner: Bruenjes, Christopher P.

Group No.: 1772

Docket No.: 035470.00001

Mail Stop Appeal Briefs-Patents  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

**TRANSMITTAL LETTER**

Please find the following correspondence items enclosed for filing in the United States Patent and Trademark Office:

1. Appeal from the Final Rejection of 4/06/2006, in triplicate, including page 168 of *Dictionary of Fiber & Textile Technology* as Evidence;
2. Copy of Notice of Appeal filed on May 15, 2006, including copy of Transmittal and Return Receipt Postcard; and
3. Return Receipt Postcard.

Please be advised the appeal fee of \$250.00 has been paid and charged to Deposit Account No. 502079 on May 19, 2006.

Respectfully submitted,

Henry S. Jaudon  
Registration No. 34,056  
McNair Law Firm, P.A.  
P.O. Box 10827  
Greenville, SC 29603-0827  
Telephone: (864) 232-4261  
Agent for the Applicant

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By:



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Re: Julian Crawford

Serial No.: 10/634,166

Filed: 11/17/2005

For: EXPANDABLE TUBULAR FABRIC

Examiner: Bruenjes, Christopher P.

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Docket No.: 035470.00001

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Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

APPEAL FROM THE FINAL REJECTION OF 4/06/2006

1. *Party of Interest:*

The real party of interest is Julian Crawford.

2. *Related Appeals and Interferences:*

There are no other appeals or interferences which affect or will be affected by the Board's decision known to Appellant.

3. *Status of Claims:*

Claims 1-19 were originally presented. Restriction was required in the PTO Action of 3/23/2005 between method claims 1-7, 16-19 of Group I and product claims 8-15 of Group II. Group II, claims 8-15, directed to an expandable tubular fabric, was elected in the response of 4/01/2005. The PTO Action of 6/25/2005 rejected claims 8-15 under 35 USC 102(b) or 103(a) as anticipated or obvious over Plymale '892. The response of 6/29/2005 amends claims 8-15. The PTO Action of 9/13/2005, again rejects claims 8-15 under 35 USC 102(b) or 103(a) over Plymale. The action is made

final. A proposed response, amending claims 8-15, was filed 9/29/2005. The response was not entered on the grounds of presenting new issues in the PTO Action of 10/13/2005. A Request for Continued Examination was filed on 11/17/2005, along with an amendment containing previously amended and not entered claims 8-15. Claims 8-15 are now rejected under 35 USC 102(b) or 103(a) as obvious or unpatentable over O'Neil '641 in the PTO Action of 3/02/2006. A response was filed on 3/09/2006. The presented claims 8-15 are again rejected under 35 USC 192(b) or 103(a) as set forth above.

Also, the PTO Action of 4/06/2006 rejects claims 8-15 under 35 USC 112 as indefinite. A proposed amendment was presented on 4/27/2006 overcoming the rejections under 35 USC 112. The PTO Action of 5/10/2006 indicates this response will be entered for the purposes of appeal. Accordingly, claims 8-15 as presented in the response of 4/27/2006 are presented for consideration. These claims are rejected under 35 USC 102(b) or 103(a) as obvious or anticipated over O'Neil.

4. *Status of Amendments:*

All amendments have been entered.

5. *Summary of the Claimed Subject Matter:*

The claimed invention is directed to an expandable tubular fabric which is formed in a continuous process which includes extruding first yarns formed of thermoplastic polymers, heat setting these first yarns to provide a predetermined range of elongation, arranging the first yarns in array about a longitudinal axis, extruding a second thermoplastic yarn as filament, causing the second filament to encircle the array and bond to the first yarns.

The expandable fabric, which is used primarily as a cover for bundled objects, such as wires or cables, which must be arranged or placed in configured and confined areas, such as automobile or plane bodies. These fabrics must be sufficiently resilient or elastic, particularly circumferentially, to accommodate size changes and contorted positions. They also must be sufficiently dense to provide an exterior protector against abrasion. See page 7, lines 10-20.

The fabric of the invention meets the above criteria most admirably, while at the same time, is less expensive to produce than the fabrics now utilized for this purpose. See pages 1-3.

The fabric of the invention comprises thermoplastic first yarns which have been drawn and heat set to fix the elongation capabilities of these yarns at a desired and diminished elongation capability. See page 5, lines 9-19. The drawn and heat set yarns are arranged longitudinally of the fabric in selected spaced positions, circumferentially, about an axis. See page 6, lines 1-4.

The fabric also includes one or more elastic synthetic filaments which are helically wrapped about first yarns. The second yarn or filament is in a molten state during the wrapping process causing it to bond with each of the first yarns at the point of cross-over. See page 6, lines 5-19. It is noted that the coils of second yarn or filaments may be spaced along the length of the longitudinally arranged yarns at desired intervals. They are generally evenly spaced. See page 7, lines 5-19.

A primary requirement of the invention is the provision that the longitudinally extending yarns or filaments are drawn and heat set to have pre-selected and known elongation capabilities which are less than the elongation capabilities of these yarns



prior to drawing and heat setting. Also, that the helically arranged thermoplastic filament or filaments be allowed to retain its normal elastic or elongation capabilities.

6. *Grounds of Rejection to be Reviewed:*

Claims 8-12 and 14 stand rejected under 35 USC 102(b) as being anticipated by O'Neil '641.

The rejection states that O'Neil anticipates an expandable tubular fabric. The term expandable tubular fabric is interpreted to include a fabric of tubular shape.

The rejection notes that expandable is not considered to be a quantitative limitation.

The rejection states that all filaments of the reference are thermoplastic and rubber, and therefore, must have expandability.

The rejection states the fabric of the reference comprises longitudinally extending thermoplastic resin filaments 11.

The rejection states that filaments 11 are drawn since they are oriented. Col. 2, lines 65-66.

The rejection states that the elastic thermoplastic filaments 12 are twice the size of the individual filaments 11 and spaced longitudinally. See Col. 4, lines 32-37 and Fig. 1. Also, the longitudinal filaments are said to be substantially engaged.

The rejection of claims 13 and 15 under 35 USC 102(a) states that O'Neil teaches that the binder bands may be of any desired cross section.

7. *Arguments:*

The rejections of claims 8-15 under 35 USC 102(b) or 103(a) are respectfully traversed as being improper as the reference O'Neil does not teach the claimed



invention.

The reference O'Neil is directed to a twine comprised of a core bundle of synthetic monofilaments twisted along the length of the twine and a synthetic binder material spirally wound the monofilaments in a direction opposite or with the direction of the core bundle to form twine less susceptible to slippage or to provide a flat cable filler. See the Abstract.

Claims 8-15 define over the reference O'Neil for the following reasons.

Claim 8 calls for "An expandable tubular fabric." The reference is directed to a non-tubular twine. *The Dictionary of Fiber & Textile Technology*, page 168 (page included), defines twine as a plied yarn made from medium twist single yarns or a single strand yarn made of hard fibers. The reference does not disclose in any form a tubular fabric, but rather twine composed of a solid core of twisted yarns or filaments engaged along their length with adjacent filaments. The core is wrapped about its circumference with a binder yarn.

The claim calls for a plurality of longitudinally extending thermoplastic filaments which are drawn and heat set to have first elongation capabilities and are arranged along an ellipsoid path in juxtaposed positions forming an elongated tube. The reference makes no reference to yarns which have been drawn and heat set to have first elongation capabilities. The reference makes no reference to the longitudinally arranged yarns forming a tube.

The claim calls for at least one thermoplastic filament, having second elongation capabilities greater than the first elongation capabilities, helically wrapped about and bonded to the longitudinally extending drawn and heat set thermoplastic filaments, said

helically disposed thermoplastic filament bonding with said longitudinally extending drawn and heat set filaments maintaining each said longitudinally extending drawn and heat set thermoplastic filament in fixed position relative to the adjacent said longitudinally extending drawn and heat set filaments. The reference makes no mention of a filament or more particularly binder 12 having a second elongation capability greater than the fixed elongation capability of the other set of yarns. The helically wrapped yarn of the reference bonds only with the peripheral of the longitudinally extending yarns, therefore, the bonding cannot maintain each of the longitudinally extending yarns in fixed relative position.

The claim calls for the longitudinally extending yarns to maintain their relative positions in the tubular fabric during use. O'Neil does not disclose a tubular fabric; therefore, there can be no use of the O'Neil twine as a tubular fabric.

The reference to column 2, lines 65, 66 supporting the assertion that the longitudinal filaments are drawn since they are oriented, is in error. The statement merely states that the monofilaments 11 forming the core bundle are oriented to all extend lengthwise and all have a Z-twist or twist in the same direction. The term oriented merely refers to the positioning of the yarns. No reference to the yarns being drawn is made.

The reference to an elongated tube being shown in Fig. 1 is in error. Nothing forming a hollow cylinder is shown or described.

The assertions of relative elongation capabilities between the longitudinally extending and helically wrapped yarns are not supported. Column 4, lines 4-11, state that monofilaments 11 and spiral bands 12 may be formed of the same or different

materials so long as they are compatible. As noted in column 3, lines 57-58, compatible only requires they both react to heat in substantially the same manner. Elasticity is not referenced.

Claims 9-15 all depend from claim 8 and are believed allowable over the reference O'Neil for the same reasons set forth relative to claim 8.

*8. Appendix of Claims:*

Claim 1-7 (cancel)

Claim 8 (currently amended): An expandable tubular fabric comprising:

a plurality of longitudinally extending thermoplastic filaments which are drawn and heat set to have first elongation capabilities and are arranged along an ellipsoid path in juxtaposed positions forming an elongated tube;

at least one elastic thermoplastic filament having second elongation capabilities greater than said first elongation capabilities which are helically wrapped about and bonded to said longitudinally extending drawn and heat set thermoplastic filaments forming helical wraps, said helically disposed elastic thermoplastic filament bonding with said longitudinally extending drawn and heat set thermoplastic filaments maintaining each said longitudinally extending drawn and heat set thermoplastic filament in fixed position relative to the adjacent said longitudinally extending drawn and heat set thermoplastic filaments wherein;

said longitudinally extending drawn and heat set thermoplastic filaments maintain their relative positions in said tubular fabric during use.

Claim 9 (previously presented): The fabric according to claim 8 wherein said longitudinally extending drawn and heat set thermoplastic filaments are of a first size

and said elastic thermoplastic filaments are of a second size, said second size being at least twice the size of said first size.

Claim 10 (previously presented): The fabric according to claim 8 wherein each of said longitudinally extending drawn and heat set thermoplastic filaments are substantially engaged with the adjacent said longitudinally extending drawn and heat set thermoplastic filaments along its length.

Claim 11 (previously presented): The fabric according to claim 8 wherein said helical wraps formed by said elastic thermoplastic filament are longitudinally spaced along the length of said longitudinally extending drawn and heat set thermoplastic filaments.

Claim 12 (previously presented): The fabric of claim 8 wherein said helically wrapped elastic thermoplastic filament has a profiled cross-section.

Claim 13 (previously presented): The fabric of claim 8 wherein said helically wrapped elastic filament has a circular cross-section.

Claim 14 (previously presented): The fabric of claim 8 wherein said longitudinally extending drawn and heat set thermoplastic filaments have a circular cross-section.

Claim 15 (previously presented): The fabric of claim 8 wherein said longitudinally extending drawn and heat set thermoplastic filaments have a profiled cross section.

Claim 16-19 (cancel)

9. *Evidence Appendix*

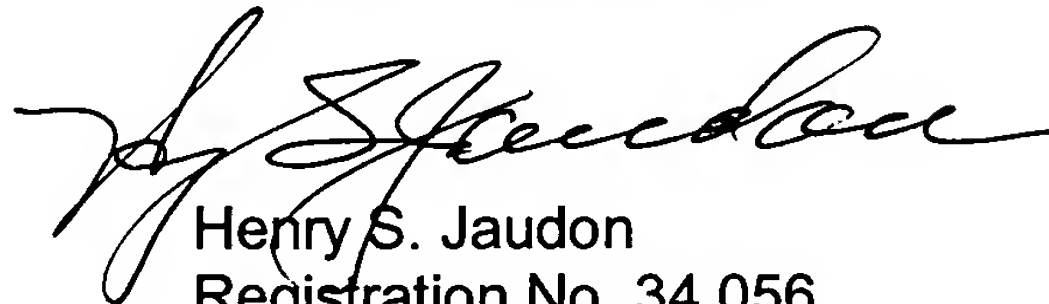
Page 168 of ***Dictionary of Fiber & Textile Technology***

10. *Related Proceedings Appendix*

(None)

Favorable consideration is respectfully requested.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "H. S. Jaudon", written in a cursive style.

Henry S. Jaudon  
Registration No. 34,056  
McNair Law Firm, P.A.  
P.O. Box 10827  
Greenville, SC 29603-0827  
Telephone: (864) 232-4261  
Agent for the Applicant

**TUNNEL TEST:** See FLAMMABILITY TESTS.

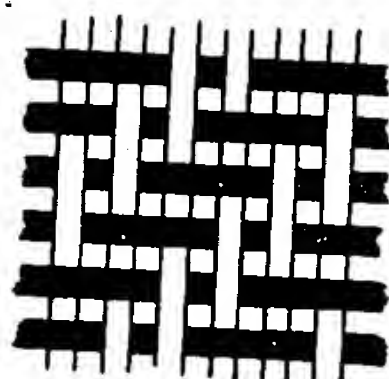
**TURBIDITY:** The decrease in optical transparency of a solution because of the presence of particulate matter.

**TURN:** The distance parallel to the axis of a yarn or rope in which a strand makes one complete spiral. (Also see TWIST.)

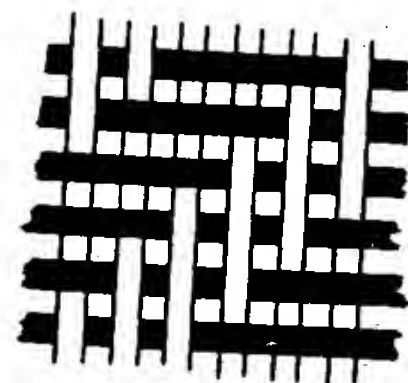
**TURNED-OVER EDGE:** A curled selvage.

**TWEED:** An irregular, soft, flexible, unfinished, shaggy wool or wool-blend fabric made with a 2/2 twill weave. Tweeds are used in all types of coat fabrics and suitings.

**TWILL WEAVE:** A fundamental weave characterized by diagonal lines produced by a series of floats staggered in the warp direction. The floats are normally formed by filling (filling-faced twill). A warp-face twill is a weave in which the warp yarns produce the diagonal effect.



2/2 Twill Weave



3/3 Twill Weave

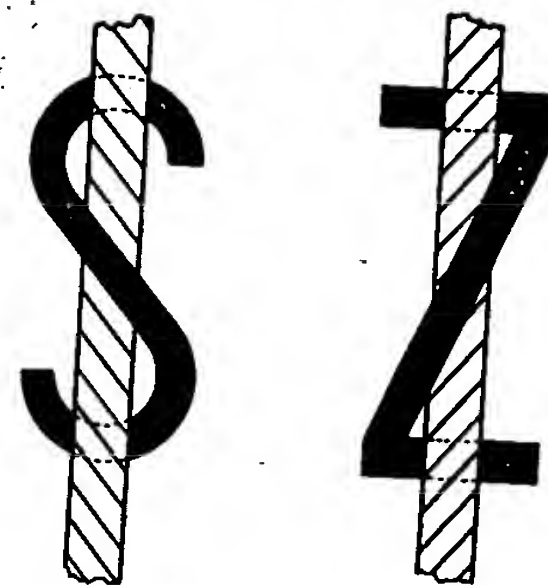
**TWLO PROCESS:** A spinning process in which yarn is made by binding fibers with an adhesive, then removing the adhesive after the yarn is made into fabric.

**TWINE:** 1. A plied yarn made from medium-twist single yarns with ply twist in the opposite direction. 2. A single-strand yarn, usually 3 or 4 millimeters in diameter, made of hard fibers, such as henequen, sisal, abaca, or phormium, and sufficiently stiff to perform satisfactorily on a mechanical grain binder.

**TWIST:** The number of turns about its axis per unit of length of a yarn or other textile strand. Twist is expressed as turns per inch (tpi), turns per meter (tpm), or turns per centimeter (tpcm).

**TWIST BLEED:** See TWIT.

**TWIST, DIRECTION OF:** The direction of twist in yarns and other textile strands is indicated by the capital letters S and Z. Yarn has S-twist if when it is held vertically, the spirals around its central axis slope in the same direction as the middle portion of the letter S, and Z-twist if they



S Twist

Z Twist

Direction of Twist



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